

# ENVIRONMENTALLY FRIENDLY INSULATED PACKAGING

Meet your sustainability targets.



## MEDIA BACKGROUND & BRIEFING PAPER

**For: Barnaby Joyce: Minister for Agriculture and Water Resources**

### 1. WHO IS WOOLCOOL?



BIODEGRADABLE



RECYCLABLE



COMPOSTABLE



SUSTAINABLE



ECO-FRIENDLY

Woolpack Australia Ltd (trading as Woolcool Australia) is a new Australian start-up company that aims to reduce our country's use of polystyrene with an innovative natural and sustainable packaging product that uses wool that was previously sent to landfill.

The company's founders, located in Sydney, have produced in excess of 1,600,000 Woolcool units since launching the company in January 2016. The company's growth in its first year has been impressive with a turnover in excess of \$2M to date with growth predicted to be +110% in the next 12 months.

Within just a few months of negotiating the license to manufacture and sell the Woolcool product in Australia, New Zealand and the Asia Pacific, Woolcool cooperated with global wool mills to ensure a minimum content of 25% Australian waste wool is included in each of the shipments. Woolcool wants to be recognised not only as a leader in the environmental stakes but as a company that supports Australian wool growers and associated industries in regional areas

and keeping jobs within Australia. This is an area that ignites a significant amount of passion.

Woolcool's corporate culture is not only based on an "environmental warrior" attitude - seeking to promote more environmentally friendly packaging solutions to many industries (as well as to their customers) but is also based on one of education, inclusiveness, friendship and support. For example, Woolcool has entered into a formal agreement with the NSW Department of Correctional Services in a bid to support, train and employ incarcerated men within the NSW prison system. Woolcool is passionate about helping the disadvantaged and giving those in need a "hand up" not a "hand down" and to ensure all in the community are given employment and training opportunities. By employing those within the prison system it gives these people a better chance of rehabilitation back into the community upon release and securing meaningful employment during their parole period and beyond through being part of positive and caring team.

[www.woolcoolaustralia.com](http://www.woolcoolaustralia.com)



## 2. WHY IS WOOLCOOL DIFFERENT?

Concerned about the environmental impact of polystyrene and after years of lengthy research and investigation looking for a better transport solution for temperature sensitive goods, the team at Woolcool discovered a more environmentally friendly packaging alternative. This is a product transforming supply chains across Australia and is a real game changer in the stakes of environmentally friendly packaging options now available to many different industries within the food, beverage, pharmaceutical and other allied industry sectors such as the floral industry.

Woolcool is made of 100% natural wool that cannot be used on the catwalks of the best fashion houses or in textiles or carpet. This “waste” wool cannot produce a comfortable garment and the fibres won’t absorb dyes used in the manufacture of clothing due to its coarseness. This waste wool has long been used for housing insulation products and now thanks to Woolcool, this wool has another use as an innovative packaging solution that outperforms polystyrene, is biodegradable, recyclable, sustainable and natural.



### WOOLCOOL AUSTRALIA'S SUSTAINABILITY OBJECTIVES

1.



Removal of polystyrene boxes from the supply chain

2.



Ensure each unit contains a minimum of 25% Australian waste wool content to keep jobs in Australia

3.



Establish a community of users as “environmental warriors” online via social media

*Now you have a choice!*

# 3.HOW WOOLCOOL IS MADE

Nature intended that wool would keep sheep warm in winter and cool in summer – Woolcool has simply borrowed from nature and created a product that does exactly that – keeps cold products cold and hot products hot while also having the added benefit of a protective cushion to safeguard products in transit.

The patented technology comprises a complex blend of wool fibres from different breeds of sheep from all over the world to provide consistent, optimal insulative properties.

Woolcool is made from biodegradable and compostable felted sheep’s wool, sealed within a recyclable food grade film. The wool used in our product is classed as “waste wool” and so Woolcool has the added benefit of helping to reduce landfill as well as reducing the use of polystyrene within Australian and global supply chains.

After the wool is sourced, it is naturally washed with soap and water, scoured and felted to make the insulation material to the required thickness. With limited thickness options, polystyrene has it’s restrictions. Woolcool comes in many thick and thin varieties, offering substantial cost savings to companies during cooler and/or shorter shipments.

Our felt is then cut to size and sealed within the recyclable, food grade film. The natural washing and scouring process that is used also ensures that the wool in the product is sterilised. In fact, after processing, the wool smells similar to a cuddly, new, pure wool jumper! In addition, wrapping and sealing it inside a recyclable film, prevents the fibres coming into direct contact with any products during transport. We guarantee to our clients that there is absolutely no danger that Woolcool will taint any products in a customer’s box – even if transporting perishable and non-packaged food items.

To ensure we close the environmental loop, we encourage recycling of the Woolcool itself by the end consumer.

A consumer recycling program is encouraged to encourage consumers to join the green revolution and to come up with creative ways in which they recycle and reuse their Woolcool liners. Entries have included ideas such as the ones in this diagram:



## ✓ CONSUMER RECYCLING IDEAS



### PET MESSES

For use as liners for cat litter trays. Horse trainers have also used the liners to soak up horse urine in stables



### FROST PROTECTION

Protecting garden plants against the cold climate and insulating water pipes so they do not freeze



### WEED PREVENTION

For lining garden beds before mulching or before laying down chipbark, stones or other decorative material to stop weed growth



### IN THE GARDEN

For lining planter baskets



### HEAT PROTECTION

For lining worm farms to stop them from drying out in the summer heat



### PET BEDS

Turning the liners into pet beds by enclosing them in old pillow cases



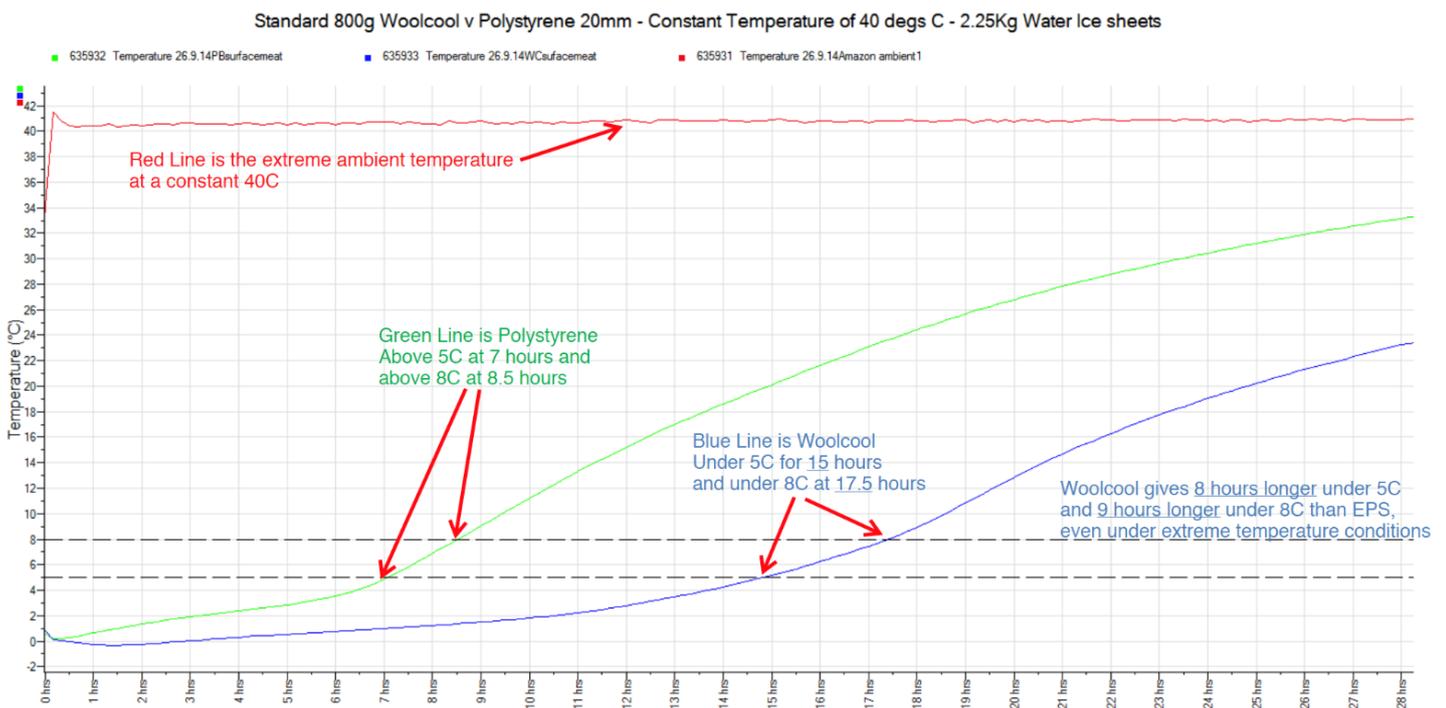
# 4. OUR OUTCOMES

## Our Key Achievements

Woolcool offers better thermal performance and is more environmentally sustainable than polystyrene packaging. Independent testing has shown Woolcool can maintain temperatures (hot and cold) for longer making it an attractive option when temperature sensitive products have to be transported over long distances. This in turn has shown to reduce food waste from spoilage and/or through carton damage throughout the cold chain as cardboard is able to maintain its integrity through Woolcool reducing humidity and condensation. As such, Woolcool can potentially provide significant benefits to many Australian industries by supporting improved cold chain performance and expansion to more geographically distant markets along with Woolcool's unrivalled green credentials.

## Our Impact

The following graph demonstrates how Woolcool outperforms its competitors:



\*To see the results of how Woolcool performs against polystyrene, foiled bubble wrap and foil boxes refer to the supporting documents.

There are also economic advantages to Woolcool thanks to the need for smaller warehouse storage requirements and the fact that more boxes can be fitted on trucks saving fossil fuel and transport costs.

Superior insulation also means fewer ice packs are necessary, making smaller deliveries more feasible and cost effective and creating less plastic and water wastage.

Woolcool also has a minimal environmental footprint as it is manufactured using “waste” wool. It utilises a product that was previously disposed of to landfill. The Woolcool liners are also able to be used many times, often more times than polystyrene boxes which easily crush. Disposal is also fuss free and simple. Once the liners need to be disposed of, the film can be removed

and recycled and the wool liners placed in Council green bins. Woolcool can also be composted and it breaks down quickly in the environment which unlike polystyrene, is fully biodegradable.

Woolcool is also attractive and can be easily customised to meet client's individual branding needs

and can be printed with catchy environmental messages.

Many Australian producers and manufacturers stand to benefit from Woolcool as both the company and the consumers have access to packaging that provides an environmentally friendly alternative to polystyrene with superior thermal performance. This in turn will help

ensure products arrive at the consumer in better condition and if applicable, with nutritional benefits intact. Often these are lost during transit due to damage and fluctuating temperatures.

A summary of how Woolcool outperforms polystyrene can be explained below:

# Woolcool VS Polystyrene

Assembled in Australia with a minimum of 20% Australian wool	 ORIGIN	Manufactured in Australia
100% natural wool and recyclable approved food grade film	 COMPOSITION	Made with petroleum - a non-renewable, non-sustainable, heavily polluting commodity
Wool fibres break down naturally in the environment over a few months	 DISPOSAL	Takes several hundreds of years to break down
	 RECYCLABLE	
	 BIODEGRADABLE	
	 SUSTAINABLE	
	 COMPOSTABLE	

# Woolcool VS Polystyrene

Decomposes naturally	 WHAT HAPPENS AFTER DISPOSAL?	Landfill
Yes. Wool is natural	DOES THE CONSUMER PERCEIVE IT AS GREEN?	No. There is increasing awareness of the environmental effects of polystyrene
No chemical odours	 ODOUR	Offensive toxic smell
Absorbs smells for nil odour	 SMELL ABSORPTION	Does not absorb smell
Bounces back when compressed	 CRIMP EFFECT	Crushes easily and product becomes friable. Polystyrene beads easily transportable via wind and rain into delicate eco-systems
6.00	 BACTERIAL AND FUNGAL COUNTS*	7.00 <small>*(the lower the value, the less organisms grew on packed meat when it was stored for 72 hours at room temperature)</small>
Reduces condensation and humidity during transport	 CONDENSATION ABSORPTION	Promotes condensation. No adsorption properties during transport
10% of a sheep's energy is converted to methane through digestion. Wool is produced in grassy pastures that converts CO2 from the atmosphere into organic compounds. This then offsets the methane gas effects. Wool is considered a carbon sink as carbon makes up 50% of its weight	 EFFECT ON OZONE LAYER	Some polystyrene is manufactured with HCFC-22, a greenhouse gas that is harmful to the ozone layer. The aerated foam is produced through the use of pentane or carbon dioxide
No toxic chemicals used in manufacture - water and soap are used to clean the wool	 TOXICITY	Contains toxic substances such as benzene and styrene, suspected neurotoxins and carcinogens hazardous to human health
250 sets = 1 pallet	 SPACE	60 boxes = 1 pallet

## Our Emerging Partnerships

# ENVIRONMENTALLY FRIENDLY INSULATED PACKAGING

Meet your sustainability targets.



A significant number of partnerships have also been formed since the launch of Woolcool. These include seven loyal clients to date - these being HelloFresh a national large meal solution delivery service and Fit Foods Club, Primal Move Food, The Free Range Butcher, Beston Marketplace, Cheese Therapy and Dinner Thyme - all healthy meal plan or specialist food delivery services. (for an unprompted video testimonial by Cheese Therapy, refer to the supporting documents). These clients alone have saved in excess of thousands of polystyrene boxes a week from entering landfill with consumers reporting their delight in the green stance being undertaken by these companies to reduce waste and to ensure packaging is recyclable. Information is provided to customers via leaflets in their delivery boxes, on the Woolcool liner printing and online via social media to encourage consumer's creativity on how they can recycle Woolcool for every day household uses.

In some circumstances, Woolcool may have rejects or wrongly cut felts. These are sold to horse breeders for their stables and as such, partnerships have been created with horse trainers from all over NSW.

Woolcool has also been in discussion with the Australian company UGG that manufacture sheepskin products such as the famous UGG boots in a bid to work together to repurpose UGG's wool offcuts into Woolcool packaging. This partnership is under development and demonstrates Woolcool's commitment to being impactful environmental warriors in the recycling and packaging sector.

Woolcool has also entered into a formal agreement with the NSW Department of Correctional Services in a bid to support, train and employ incarcerated men and women within the NSW prison system. Woolcool is passionate about helping the disadvantaged and giving those in need a "hand up" not a "hand down" and to ensure all in the community are given employment and training opportunities. By employing those within the prison system it also gives these people a better chance of rehabilitation back into the community upon release and securing meaningful employment during their parole period and beyond through purpose, friendship and being part of a positive and caring team.

## 5. OUR INNOVATION

Woolcool's innovation has been turning the application of waste wool on its head and completely changing its use for transportation of perishable food and temperature sensitive items that also need to be housed safely while maintaining cool temperatures. It's back to basics for us as wool is nature's own super fibre and outperforms synthetically made fibres.

Woolcool which has been used extensively throughout Europe and the UK with great success has only recently become available to Australian industries. It uses "waste" wool that usually has no commercial value. This wool is scoured, detangled and felted before being encased in recyclable food grade plastic for use by potentially thousands of different types of Australian businesses.

Within just a few months of negotiating the license to manufacture and sell the product in Australia, New Zealand and the Asia Pacific, Woolcool cooperated with global wool mills to ensure a minimum content of 20% Australian waste wool is included in each of the shipments. Woolcool wants to be recognised as a leader not only in the environmental stakes but as a company that supports Australian wool growers, associated industries and communities in regional areas and keeping jobs in Australia.

Woolcool has been scientifically proven for its environmental credentials and has received impressive testimonials from businesses and their customers. Woolcool is currently

repeating these scientific tests in a bid to provide more independent results on the effectiveness of Woolcool. The University of Victoria are conducting these tests.

[www.woolcoolaustralia.com](http://www.woolcoolaustralia.com)



Woolcool currently operates a manufacturing facility in Sydney which assembles and distributes over 25,000 Woolcool liner units per week which are used for transporting and delivering fresh food and other consumables nationally. The business has been growing weekly in excess of 500 new units per week and continues to grow in popularity as well as in its number of local staff - keeping jobs in Australia.

Since entering the Australian market in January 2016 (and at the time of writing), Woolcool has managed to secure seven clients who have successfully switched their packaging to the more environmentally friendly solution and as a result

have amended their environmental policies. Since the launch of Woolcool, it is estimated on average over 25,000 polystyrene boxes are saved from landfill each week resulting in approximately 1,300,000 polystyrene boxes saved annually. This number continues to grow on a weekly basis.

Lastly, Woolcool offers a significant reduction in fossil fuels during transport and shipment due to clients discovering they can fit more packaging per pallet compared with packaging alternatives such as polystyrene. For example, one client was able to put 240 boxes on one pallet compared to 60 polystyrene boxes on one pallet!

## 6. FUTURE PROSPECTS

---

Hello Fresh continues to be our foundation customer and since Hello Fresh was launched in Australia only a few short years ago, 15 more online meal solution competitors have been launched. Woolcool are currently supplying five of these companies and we are in discussions with numerous more. It's an emerging market and a very important one when it is considered that groceries are the second highest spend per household after real estate. Our impact here alone is expected to be very impressive.

Our future prospects will also see us turn to restaurant deliveries as it is open to the next evolution for packaging. There is a massive turnover of waste in this sector as 7% of all meals consumed are takeaways/deliveries and reducing this waste by even 10% would see a dramatic decline in non-biodegradable and non-recyclable material entering landfill.

In addition to the restaurant delivery industry, we also plan to target the Australian human pharmaceutical industry (and eventually the veterinary pharmaceutical industry). This is a very important sector that relies on strict temperature control of sensitive vaccines and other protein based drugs that often have to be transported over long distances such as to remote and outback towns within Australia. Woolcool insulated packaging has been independently proven to keep pharmaceuticals within the critical 2°C and 8°C for 24 hours to more than 72 hours. Superior insulation leads to fewer ice packs needed to help prevent pharmaceuticals falling below the critical 2°C and making smaller deliveries more feasible and cost effective. Woolcool has the potential to save lives and millions of dollars in spoiled pharmaceuticals!

Woolcool is also on track to selling more than two million units in its first year of trading, equivalent to removing two million polystyrene boxes from manufacture and disposal to landfill or ending up in our delicate ecosystems. This is an achievement we are especially proud of.

Lastly, we plan to continue our consumer campaigns and launch more aggressive campaigns and competitions through our clients but also through our own communication channels such as our social media platforms

in a bid to encourage reuse and repurposing of the Woolcool liners (refer to the content and images printed on our liners in the supporting documents).